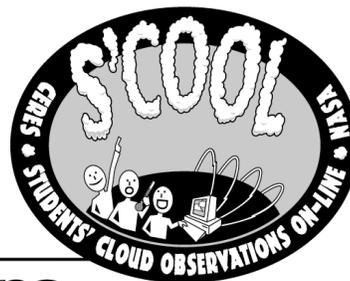




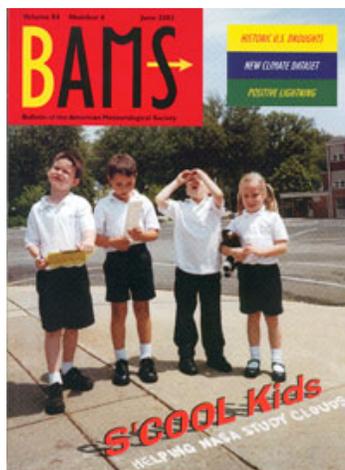
# S'COOL BREEZE



## Student's Cloud Observations On-Line

Volume 3, Issue 5

September 2003



## S'COOL Featured in BAMS Cover Story

By Julia Cole, LaRC Atmospheric Science Competency

Lessons learned from the international success of the S'COOL (Students' Clouds Observations On-Line) outreach project are highlighted in the cover story of the June edition of the Bulletin of the American Meteorological Society (BAMS).

Educating students using NASA resources was the topic of conversation between Langley Research Center scientists and a local sixth-grade science teacher in 1996. The lunchtime exchange planted the seed for S'COOL that seven years later would blossom into an educational tool used in nearly 1,500 schools worldwide. "It's very rewarding to operate at the interface between cutting-edge research and K-12 education," said Lin Chambers, S'COOL's director. S'COOL currently reaches students in all 50 U.S. states and in more than 60 countries. Students take cloud observations during a scheduled overpass of the Clouds and the Earth's Radiant Energy System (CERES) satellite instruments. They then submit their information to the S'COOL database. Scientists use observations to help test the accuracy of CERES instruments that measure the Earth's energy balance and how it is influenced by clouds.

In addition to providing essential ground-truth data for CERES scientists, S'COOL is helping students improve their math, science, observation and technology skills. The ingenuity of teachers also has expanded the usefulness of S'COOL beyond its expected applications, Chambers and her co-authors report.

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## S'COOL Teaching Methods: Langley Workshops Push Math and Science Curriculums

By Rebecca Menges, LaRC (Edited by Roberto Sepulveda)

Langley Research Center hosted two workshops in June to show teachers some "S'COOL" ways to incorporate math, science and technology into their curriculums. The workshops, which took place from June 23-27, were sponsored by two educational outreach programs in Langley's Atmospheric Sciences Competency: S'COOL and SOLAR (Students' On-Line Atmospheric Research). Both programs give students hands-on experience with collecting, analyzing and reporting data. S'COOL engages students in science by validating data for Clouds and the Earth's Radiant Energy System (CERES) instruments. Scientists are currently using CERES data to study clouds' effects on the Earth's climate.

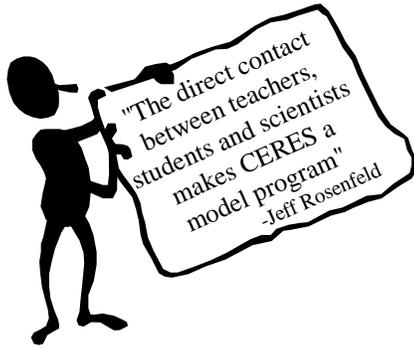
Fifteen teachers participated in the S'COOL workshop; most were from local schools, but a few traveled from North Carolina, West Virginia and Puerto Rico. The workshop encouraged teachers to increase their participation in S'COOL and to recruit neighboring schools to get involved in the program.

Lin Chambers, S'COOL's director, said she hoped the participating teachers would bring back a greater understanding and enthusiasm for learning about math and science. Tammye Gerdes, an elementary school teacher in Hampton, Virginia, called the



5th Annual Summer S'COOL Teacher Workshop participants share a photo with the S'COOL Team

*(Continued on page 2)*



A teacher in Virginia uses cloud observations gathered for S'COOL as a topic for improving her students' writing skills, encouraging them to use similes to describe the clouds. Since S'COOL translates its Web site and educational material into French, Spanish, Italian and German, the project also has become a way for students to practice their foreign language skills.

While S'COOL is improving the quality of education, it is also achieving an equally as challenging goal: inspiring the next generation of explorers.

In a survey of S'COOL participants, "33 teachers reported a total of 557 students showing increased interest in science as a career after being involved in S'COOL," Chambers wrote. "While this is a qualitative assessment, it is encouraging news for the S'COOL team."

### **BAMS: Letter from the Editor: Bridging the Divides - Jeff Rosenfeld, Editor-in-Chief**

Speaking about the S'COOL project, Rosenfeld wrote, "Reality-based learning is a common theme in education these days, and the Clouds and the Earth's Radiant Energy System (CERES) project has taken the theme further than most programs. The educational program of this NASA Earth-observing program is an unusual mission. Rather than simply provide students with information about clouds and the Earth's radiation budget, CERES went a step further by actively involving schoolchildren. The participants are primary and secondary students (basically ages 9 and up), yet their visual observations of clouds – taken from the ground at school – should help CERES investigators validate radiation observations from the satellite in space. The direct contact between teachers, students and scientists makes CERES a model program, and I hope Lin Chambers' article in this issue inspires others to try this type of outreach." For more information on this June 2003 issue of BAMS (Bulletin of the American Meteorological Society) and Lin Chambers' article visit our message of the month at: <http://scool.larc.nasa.gov>

*(S'COOL Teaching Methods...Continued from page 1)*

program "an eye-opener" and lauded its ability to make teachers and students more aware of the educational resources available to them. "It gave me a better awareness of what's out there," she said. "There's no excuse not to teach a subject in math or science."

NASA's outreach programs aim to make teachers and students comfortable with learning new technology and excited about doing practical work with a real purpose. "It's a way for students to take their skills and actually be a part of something, versus just reading from a textbook," said Melissa Thorner, a teacher from West Virginia. "It gives kids more of a real-life application to education," said Lynndell McNair from Norfolk.

Although the teachers who attended the program were reluctant to leave what they described as their newly formed "NASA family," they could hardly wait to try out their ideas in the classroom. As one S'COOL participant put it, "If you don't take this, you're a fool!"

# NASA STEM

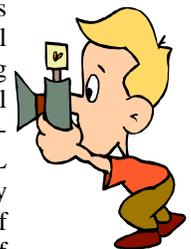
NASA Science Trivia  
to Excite & Motivate Students

As participants with the S'COOL Project many of you are familiar with all of the major cloud types appearing in the skies. In fact, we are sure that most of you are aware that these major cloud types occupy the lower eight mile area of our atmosphere known as the troposphere. But did you know that there are clouds that can sometimes appear well into the stratosphere (the layer above the troposphere)? These cloud types are rare and named 'Noctilucent' which comes from the Latin roots meaning, 'luminous night' clouds. They typically appear long after sunset and have a vivid, almost magical, coloration. For some really neat photos visit Noctilucent Clouds Observer Homepage at: <http://www.nlcnet.co.uk/>



## **It's time for S'COOL's 3rd Cloud Photo Contest**

Back by popular demand! S'COOL will host its third cloud photo contest open to all of our participants. The theme for this contest will highlight those 'puffy' Cumulus clouds. Each school may submit **one photo entry for each cloud level type (cirrocumulus, altocumulus & cumulus – high, mid and low respectfully)**, therefore we suggest that each school have it's own contest and select the best photo(s) to send to S'COOL. Scientists here at NASA will then choose from the photos submitted and 1st, 2nd and 3rd place winners will be announced on our website and in the December newsletter. Each of the winners will receive a special gift from NASA Langley Research Center. You may send us photos developed from any film type or send us a digital picture of your entry. We will accept photos beginning October 1st until the 31st of the month. Send or e-mail your school's entry(ies) along with teacher's name, e-mail address, school name & address to S'COOL (address on back). Photos sent will become the property of NASA and will not be returned. Don't be surprised if some of your photos end up on our website gallery of clouds.





## Quarter's Worth of Websites

Mark your calendars for **EARTH SCIENCE WEEK 2003!**

[www.earthsciweek.org](http://www.earthsciweek.org)

The American Geological Institute in cooperation with the GLOBE Program and NASA's CERES S'COOL Project invite you to collect and report cloud observations during Earth Science Week 2003, October 12-18. The theme of this year's event is 'Monitoring Our Changing World.' Have your students become a part of this global event and invite non-S'COOL colleagues to register and participate in this weeklong event (S'COOL participants need not register).

### NASA Resources in Spanish and Other Languages

[http://www.uidaho.edu/ed/nasa\\_rerc](http://www.uidaho.edu/ed/nasa_rerc)

Many NASA resources translated into Spanish and other languages can be found online. A comprehensive document has been created that provides a listing of over 50 available online resources from the NASA centers across the United States. This document can be found on the NASA Idaho Regional Educator Resource Center website by clicking on "Resources in Other Languages."

### 2003-2004 NASA Competition Programs & deadlines

**VINNY Award:** K-12 English and Spanish categories

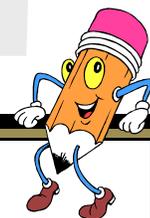
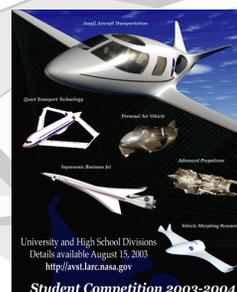
<http://vinny.pcs.cnu.edu> Deadline: October 31, 2003

**NASA Revolutionary Vehicles Student Competition** 9-12

<http://avst.larc.nasa.gov> Deadline: November, 15, 2003

**National Student Involvement Program:** K-12 competitions; 9 categories

<http://www.nsip.net/index.cfm> Deadline: January 2004



### Without further delay: The Top 25 S'COOL OBSERVERS

The database continues to grow as students continue to head OUT to observe and send their data IN. "Thank you" to all participating schools that have contributed to this effort by submitting observations. We would like to recognize this year's top 25 schools with the greatest number of reported observations between the months of August 2002-July 2003.

#### This Year's Top 25 Observing Schools are:

1. Chartiers-Houston Jr./Sr. High School, Houston, PA, USA
2. St. James School, Falls Church, VA, USA
3. Waynesboro Area High School, Waynesboro, PA, USA
4. Osnovna Skola Mate Lovraka, Veliki Grdjevac, Croatia
5. Colegio de Desarrollo Rural Miguel Valen, Antioquia, Colombia
6. St. Anne School, Porterville, CA, USA
7. Ecole Primaire Publique, Etrun, France
8. Colegio Radians, Cayey, Puerto Rico
9. Escuela CROEM, Mayaguez, Puerto Rico
10. Harding Middle School, Cedar Rapids, IA, USA
11. Eugenio Maria de Hostos, Mayaguez, Puerto Rico
12. Greensboro Day School, Greensboro, NC, USA
13. Americano Nicaraguense, Managua, Nicaragua
14. Jewett Street School, Manchester, NH, USA
15. Hunterdon Christian Academy, Flemington, NJ, USA
16. Sissonville Elementary School, Sissonville, WV, USA
17. Laurelton-Pardee Intermediate School, Rochester, NY, USA
18. Redmond Elementary, Redmond, WA, USA
19. Ecole Jean Jaures, Le Versoud, France
20. Escuela Industrial No. 6, Santa Cruz, Argentina
21. North Ridge Magnet School, Moreno Valley, CA, USA
22. Memorial Middle School, Laconia, NH, USA
23. Wan-Fang Middle School, Taipei, Taiwan, Republic of China
24. E.D. Feehan High School, Saskatoon, SK, Canada
25. Peru Central School, Peru, NY, USA



## Teacher Corner

Over 1525 participants are now registered.

Keep spreading the word!

Have you changed your school information? Please remember to notify us of any changes in your school information, e-mail address or anything you feel is important for our database.

Don't forget!

Daylight Saving Time will soon be over!

Remember to request your satellite overpass schedule for the new times beginning October 27th.

New Teacher Resource!

The S'COOL Tutorial

Need a little refresher on S'COOL? How about a new tool to help your students understand the importance of their observations? Well, we have the answer for you!

Try our new on-line S'COOL Tutorial. It is available at: <http://asd-www.larc.nasa.gov/SCOOOL/teachers.html>

Intensive Observation Period - October 12-18

New S'COOL Website

Get ready for the unveiling of the New S'COOL Homepage Same URL different look. Coming Soon!

Thank you for your continued participation!

NASA Langley Research Center  
CERES S'COOL Project  
Mail Stop 927  
Hampton, VA 23681-2199



## **Upcoming Events**

SACNAS National Conference  
October 2-5, 2003  
Albuquerque, NM, USA

Earth Science Week 2003  
IOP—Intensive Observation Period  
October 12-18, 2003

Foreign Language Assoc. of VA Conf.  
October 24 & 25, 2003  
Richmond, VA, USA

Conference for the Advancement of Science Teaching  
October 30-November 1, 2003  
Houston, TX, USA

<http://asd-www.larc.nasa.gov/SCOOL/visits.html>

For more information contact us by:  
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<http://scool.larc.nasa.gov>  
Roberto Sepulveda, editor  
Dr. Lin Chambers, French translator  
Roberto Sepulveda, Spanish translator

## ***A Fountain of Youth!***

*“As long as I still get excited about learning, I will never retire! I have been teaching for 34 years and still feel energized as if I were a new teacher... because of folks like you (speaking of the S'COOL Team and presenters at this years S'COOL Workshop)!”*

*Barbara Bailey, K-5 Science Resource Teacher, 2003 Summer S'COOL Teacher Workshop Participant,  
Yorktown Elementary Magnet School: Yorktown, Virginia*